Better health outcomes for people with physical disabilities in China through audits of mobility related access: a research and implementation need

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Understanding disability

- Disability is a complex, dynamic and multidimensional concept (WHO, 2011).
- Often defined as ***people who live with physical, cognitive or sensory impairments that limits their day to day activities***.

(Source: http://www.med.uio.no/helsam/english/research/projects/poverty-disability-china/disability-china300x225.jpg)

Global context of disability

- 15% of people are reported to have a disability (WHO, 2011)
- 80% live in developing countries
- Many live in poverty and are some of the most marginalised people in society
- Over 90% of children with disability in developing countries do not go to school (UNESCO, 2012)

(Source: http://globalaccessibilitynews.com/files/2013/04/imgcwdchina.jpg)

Disability context in China

- 85 million people live with disability in China, 30% of whom have a physical disability (Zheng, Q., et al 2014)
- Up to 2006 overall disability rates increased by 0.5% per year – more for males and in rural areas (Zheng, X., et al, 2011)
- However, rates of physical disability increased by 11.2% per year
- With an ageing population this is likely to increase faster

WHO Global Disability Action Plan (2014-2021): Better health for all people with disability

One of the three objectives of the Action Plan is to remove barriers and improve access to health services and programmes

(Source: http://blog.placespeak.com/wp-content/uploads/2013/11/overcoming-barriers.png)

Issues in developing countries

- Roads often built without crossings/walking routes
- Increased motorization= roads more dangerous for pedestrians and cyclists (WHO, 2013)
- Poor traffic management
- Range of factors contribute to poor traffic management: the mix of traffic, the “absence of adequate planning and implementation skills” and the status of traffic control in bureaucratic structures (G. William, 2003)

(Source: http://news.bbcimg.co.uk/media/images/49203000/jpg/_49203058_010236176-1.jpg)

Thai spinal injury study

- Northeast Thailand – **medical anthropology approach** (King and King, 2011)
- Former **breadwinners who had suffered a spinal injury** resulting in paraplegia or quadriplegia from a road traffic crash:
  - Repeated interviews
  - Urban and rural
- Also interviewed:
  - Family carers
  - Bio-medical informants, traditional healers and monks
- Focus groups with villagers

Source: King and King, 2011

Thai spinal injury study (continued)

- Information also provided on **transport context**:
  - Cheap for non-disabled people, prohibitively expensive for those with a disability
  - Lack of vehicles capable of transporting people with a disability
  - Led to injured people "disappearing" from records
  - Conceals scale of the problem
  - Reduces the likelihood that their experiences can influence road safety policies and programs
- Relevance: addressing their needs can address wider problems – ***"iceberg principle"*** e.g. older people and children

Transport

(Source: http://31.media.tumblr.com/tumblr_m9zyhd9b1g1qdjbb7o1_500.jpg)

- The **lack of suitable, dependable, physically accessible and affordable transport** for people with disabilities has been identified as a major barrier to accessing health and educational facilities
- Motorcycles place individuals at high risk of traffic accidents as many people drive **without licenses, helmets, whilst overloaded or under the influence of alcohol**
- Buses and taxis may be hired privately, however, **they do not have the space required to accommodate wheelchairs and may not be financially viable**

Sources: Kleinitz, Nimbul, Walji, Mannava & Vichetra, 2012, p.4; Van Leit, 2008, p.994; World Health Organisation, 2011, p.66; Onnavong & Nitta, 2005, p.1076; World Health Organisation, 2013, p.12; Cambodian Disabled People's Organization, 2013, p.5.

Vulnerable road users

People with disability are vulnerable road users and are **more** at risk of fatality if they are involved in a road accident because of:

- Exposure to traffic
- Seeming unpredictability in negotiating traffic
- Physical instability and likelihood of falling in a traffic environment

(Samarkody, 2012)

(Source: http://www.disabilitynow.org.uk/sites/default/files/styles/content-top/public/race.jpg?itok=2IAFr340)

Physical access

- Physical access for people with disability in developing countries can be problematic, e.g. buildings have well known access problems
- But also routes, e.g. paths:
  - Uneven
  - Cracked
  - Narrow
  - Poorly maintained
  - Often densely populated with rubbish, tradespeople,
  - food stalls, vehicles, street lighting, signs, bus stops

(Source: http://designaroundtheworld.files.wordpress.com/2012/04/img_0726.jpg)

Sources: Mak & Nordtveit, 2011; Kormardjaja, 2001; Whitzman, James & Powaseu, 2013; Samarthyam Nation Centre for Inclusive Environments, 2010

United Nations Convention on the Rights of Persons with Disabilities

- **Signatories: 158** (China)
- Signatories must identify and take appropriate action to **remove obstacles to accessibility and mobility for individuals with disabilities (**United Nations, 2006, Article 9)
- Signatories have an international obligation to ensure that people with disability are able to access:
  - The **physical environment**, which includes; roads, schools, housing, medical facilities, public buildings and places of employment
  - **Information**, which may range from understanding bus timetables to participating in community gatherings
  - **Transportation**, which includes buses, taxis, trains and air travel
  - **Services and facilities** provided for the general public (United Nations Enable, 2007)

Access Audits

- A way to address UNCRPD obligations, **but**:
- Searches of the literature have found no audit tools specific to developing countries
- Attempts to apply Walkability surveys and access audits to non-Western contexts
- Access audits may provide governments, organisations and communities with a clear understanding of the accessibility of facilities, areas that require attention and recommendations for improvement (Waterman & Bell, 2013, n.p.)
- Cyclical process of continual improvement (Grant, 2005)
- Findings are then incorporated into a structured plan of action, with highlighted priorities and achievable, realistic timeframes
  - Can be used by governments/organisations to provide evidence of attempts to resolve the access issues faced by individuals with disabilities
  - Assist governments in making cost-effective decisions about access priorities

  (Waterman & Bell, 2013)
- However does not address **vulnerable road user** problem:

Road Safety Audits

- RSAs are a formal process undertaken by a qualified team, who compile a report on the road's safety, deficiencies, crash potential and potential resolutions
- RSAs may be completed on freeways, divided roads, intersections, pedestrian routes, signal upgrades and crash reduction projects
- RSAs investigate (amongst a range of things):
  - road alignment
  - cross sections
  - auxiliary lanes
  - Intersections
  - signs
  - Lighting
  - marking and delineation
  - crash barriers and clear roads
  - traffic signals
  - pedestrians and cyclists
  - bridges and culverts
  - pavement

(Austroads, 2009)

Proposal: Audit Tool

- Access tools identified in literature search have been developed and designed for developed countries and Western contexts
- Demonstrable difference between developing and developed countries when examining the built and liveable environment, warranting the development of suitable and culturally appropriate access, mobility and road safety tools
- In discussions with Handicap International an Audit Tool has been developed:
  - Incorporates road safety audit elements and principles
  - Projected to be cost effective
  - Adaptable to different contexts
  - Provides universal design guidelines, but focuses on whether the design and facilities are useable
  - Consultations with NGO ensure cultural and contextual appropriateness
  - Simple design means it can be used by laypeople and professionals

ACCESSING THE TRANSPORT STOP

On the route taken/area audited, what types of public transport are used? (e.g. bus, tuk-tuk): _____

Time of audit: _____

Operator number/route number (where applicable): _____

Intended destination (e.g. hospital, medical facility, market, place of worship, school): _____

Type of area being audited (e.g. urban, peri-urban or rural): _____

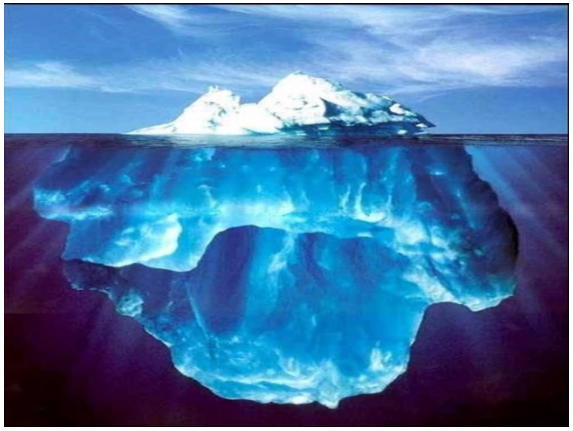
Paths

1) Is there a path for pedestrians?		Description of barrier/comments
2) Where there are no paths, can the road be safely utilised by pedestrian users?	Y/N/NA	_____
(Are users likely to be seen using the road? Does the mix of traffic allow this?)	Y/N/NA	_____

140) Do users of the crossing use established crossing points? *(Such as zebra crossings, signalled intersections)*	Y/N/NA	Description of barrier/comments
141) Do traffic signals last for long enough for all users (including people with a disability and elderly people) to have time to cross the road in a safe manner? *(Without having to run or walk faster than a comfortable pace)*	Y/N/NA	Description of barrier/comments
142) For unsignalized intersections, are there sufficient gaps in traffic for all road users (including people with a disability and elderly people) to cross the road safely? *(Without having to run or walk faster than a comfortable pace)*	Y/N/NA	Description of barrier/comments
143) Are the pedestrian crossings marked well enough with contrasting colours to be seen? *(Note: Crossing areas should be marked with visible stripes)*	Y/N/NA	Description of barrier/comments
144) At traffic crossings are there kerb ramps on both sides of the	Y/N/NA	Description of barrier/comments

Additional benefits

- Access issues for people with disability can be identified as **“the tip of the iceberg”;** meaning that other members of the population may experience similar issues (King, 2000)
- Improved accessibility benefits individuals with disabilities, a range of groups may also benefit including:



http://joinvedahorner.com/2013/11/17/success-is-like-an-iceberg-80-of-the-work-to-get-there-is-hidden-under-the-water/

- **Senior citizens**; who may have difficulties with mobility, vision and hearing
- **People using bicycles**; where footpaths and ramps are established and maintained (Government of Western Australia & Disability Services Commission, 2010)
- **Children, pregnant women and individuals with temporary injuries (**Whitzman, James & Powaseu, 2013)

Proposal for China

- Rapid development of China, increases in rates of physical disability and the impacts of an ageing population jsutify a collaborative approach to addressing the requirements ofn the UNCRPD
- Proposal: collaborative research through the Australia-China Centre for Public Health to:
  (1) tailor the audit tool for use in China;
  (2) evaluate its use on a sample of routes;
  (3) develop plans for changes to the routes in consultation with local authorities;
  (4) evaluate the effectiveness of implemented changes in terms of access and health